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ABSTRACT

Aesthetic value enhances personal and professional lives and contributes to people's environment. If one defines the aesthetic sense as the faculty that enables one to modify the quality of his or her environment, then it follows that aesthetic education should be a means to achieve this end. In order for that to happen, there must be changes both in the schools and in the wider community to allow children the fullest opportunity to develop and use this aesthetic sense, act on their environment as they learn, and be engaged with the environment rather than merely passively responding to it. This document examines: (1) defining aesthetics in education; (2) the aesthetic experience; (3) creating an aesthetic climate; (4) teaching curriculum content through the arts; (5) educating teachers in aesthetics; and (6) evaluating the aesthetic dimension. The document concludes with 25 references. (MM)

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Teaching Aesthetics

Sandra L. Bryan

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Teaching Aesthetics

by
Sandra L. Bryan

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Introduction

Aesthetics can be defined as the search for beauty — a search that characterizes and illuminates all cultures. Throughout history the search for beauty has contributed to a culture's quality of life. As educators we are committed to improving the quality of life for students. Therefore we must understand how to search for beauty ourselves and how to help learners search for beauty.

Aesthetic education is an approach to education and the arts that emphasizes the development of aesthetic potential. It suggests a view of the arts that derives meaning from the organic relationship of art and experience. Art is a fundamental human process. Every society, the most primitive to the most sophisticated, has expressed itself through art. But more important, every person seeks to put thoughts and emotions into an art form. Art is a personal and satisfying activity at any age, for though the arts are responsible for a greater awareness of the external world, the arts also give vent to the emotions, the joys and fears of life.

Art is a dynamic and unifying activity with great potential for the education of our children. The process of

drawing, painting, or constructing is a complex one in which the child brings together diverse elements of experience to make a new and meaningful whole. In the process of selecting, interpreting, and reforming these elements, the child gives his or her teachers and parents new insights into how the child thinks, feels, and sees his or her place in the world. Indeed, the arts, writ large, are an inseparable part of the human journey. They provide us with pleasure, spark our creativity, and frame our reality. We value them for themselves; and because we do, we believe knowing and practicing them are fundamental to the healthy development of our children's minds and spirits.

How do aesthetics enrich our lives? Viewing a masterpiece, such as a Rembrandt painting, renews our spirit and soul. Listening to a symphony or an organ prelude takes us beyond language and gives a metaphorical sense of the holy. If we as teachers experience the joy of beauty, if we are educated by the arts to be more than we have been before, and if daily the aesthetic experience makes us believe in wonder, then the children we teach are enriched through our experience. According to many theologians, every human is a perfect and unique creation. Educating for beauty is our task in teaching aesthetics, and living beauty in our personal lives is critical to our teaching.

Because educating for beauty and experiencing the joy of beauty are critical to teaching and learning, in this fastback I will examine the teaching of aesthetics: the aesthetic experience, creating an aesthetic climate, teaching curriculum content through the arts, educat-

ing teachers in aesthetics, and evaluating an understanding of aesthetics.

Defining Aesthetics in Education

Aesthetics encompasses the study of mind and emotions in relation to the sense of beauty. Beauty is the quality present in a thing or person giving deep satisfaction to the mind, whether arriving from sensory manifestations, a meaning, or a design or pattern. Aesthetics is a branch of philosophy dealing with the nature of beauty, art, and taste and with the creation and appreciation of beauty.

"What is beauty?" is an age-old question. The answer is still elusive. What makes a melody or a picture pleasing? Why do we find the arts enriching? How do we define the joy of beauty?

Teaching content so that the beauty of each subject becomes a reality for learners includes use of the visual arts, craft, poetry and drama, and dance and music. For instance, when children learn to play music or sing melodies, it helps them to better put the pieces together in a wide range of situations that require problem-solving skills. When children make music, they must order notes in their brains to create the sounds that form

a melody, thus strengthening certain neural pathways in the cortex — the higher brain centers where spatial reasoning takes place (Woody 1998). Music not only touches people's souls, it also shapes growing minds.

John Dewey says that the eternal quality of great art is its tendency to increase the viewer's capacity for further experiences (cited in Archambault 1964, p. 163). Any activity that produces objects perceived as beautiful, and whose operation is a continual source of enjoyable perception of other events, exhibits fineness of art. To the scientist, knowledge is a means to more knowledge; so to the artist is aesthetic insight a means to further aesthetic insight, as well as to enhancement of life in general.

Dewey provides a model of education for the teacher as the most mature member of the group in a classroom setting; he or she will use the artist within to facilitate the development of the child as artist. No intellectual activity is complete without aesthetic quality. Therefore, true instruction is aesthetic.

As educators, we are committed to improving the quality of life for students. What part does aesthetic education play? If beauty is meant to be joyful, then individuals must learn to experience joy. To experience the joy of beauty, then, is the purpose of aesthetic education (Curtis 1981).

Critical to joyful learning is an awareness of how scientific, social, and humanistic enterprises all have aesthetic aspects. Students engaged in aesthetic education will see how the patterns of geometric shapes in nature have both mathematical and aesthetic qualities or how the development of historical trends is related to developments in the arts of a particular society. Both teach-

ers and teacher educators discover the aesthetics of interaction with students and the arts by incorporating aesthetics and the search for beauty in teaching and learning.

Components of Aesthetic Education

Read (1956) assumed that the general purpose of education is to foster the growth of what is individual in each human being, at the same time allowing the individual to find his or her place in the social group. Read defines the scope of aesthetic education as that which expresses feelings, perception, and sensation in communicable forms of mental experience that would otherwise remain partially or wholly unconscious. To Read, the techniques of aesthetic education encompass the following: visual education for the eye (design), plastic education for touch, musical education for the ear, kinetic education for the muscles (dance), verbal education for speaking (poetry and drama), and constructive education for thought (craft). He says that it is difficult to separate visual and plastic experiences, because they are both involved in a unified apprehension of the external world of space. It is feasible to regroup these techniques so that they correspond to, and are an expression of, the four main functions into which our mental processes are traditionally divided: design, corresponding to sensation; music and dance, corresponding to intuition; poetry and drama, corresponding to feeling; and craft, corresponding to thought. Through the techniques of aesthetics, the *whole* child can be educated.

The Need for Aesthetics in Education

Howard Gardner (1993), in articulating the theory of multiple intelligences, reveals the relationship of learning and aesthetics. He says that each of the forms of intelligence can be directed toward artistic ends. That is, the symbols of any form of knowledge may be presented in an aesthetic fashion. Whether an intelligence is mobilized for aesthetic ends turns out to be an individual or a cultural decision. Thus linguistic intelligence can be used for writing poems or novels, in which case it is being deployed aesthetically; or it can be used in ordinary conversation or for the purpose of authoring legal briefs — in neither case being employed aesthetically. Spatial intelligence can be used in parallel parking or in creating a sculpture. Teachers, according to Gardner, must think in an aesthetic way; to make schooling successful, they must expose their own aesthetic values. Speaking in a recent video interview, Gardner (1996) says that schools, in judging whether they are effective, should ask, "Can students think in an aesthetic way?"

Several authors state the need for aesthetic education as basic to the curriculum in our schools. Haggerson and Heidt (1979) report that the curriculum, instructional program, and personnel of the school can be used to sharpen students' sensitivities. Aesthetic education is basic to this curriculum because it is founded on the creative integration of sensing, feeling, intuiting, and thinking. The arts curriculum not only may be used to sharpen students' awareness and sensitivities, it also

may encourage increased aesthetic awareness and understanding by use of the critical/appreciative mode. Students ponder what is unusual about a particular work through exploratory questions, such as: Why is the work important? Under what constraints was the artist working? What individual responses do I feel toward the work?

Broudy (1977) explains that scores in the three R's rise with the inclusion of aesthetic education because experience with the arts improves the attitude toward schooling; art activities are interesting, motivate pupils, and are more concrete than scholarly or academic studies, which tend to be more theoretical or abstract. This improvement in motivation, it is hypothesized, carries over to other phases of schoolwork. Because discipline is so closely related to motivation, anything that promises to capture attention and maintain interest is always welcomed by educators.

Another explanation, or an alternate hypothesis, is that work in the arts improves perception, motor skills, and sensory motor capabilities, and that these transfer to analogous operations in reading, writing, and possibly computation.

Sylwester (1998) states the arts, language, and mathematics have important biological values in themselves. The arts are highly integrative, involving many elements of human life. Sylwester, in discussing the biological value of the arts in schools, focuses on the heightened appreciation of our sensory-motor capabilities, which he calls, "aesthetics." Another argument for regarding aesthetics in education as basic is that it is, in fact, a

fourth R. If reading and arithmetic are codes or languages in which ideas are stored, so to speak, then one might also think of the artistic skills as learning the codes by which one penetrates the realm of ideas and feelings in the form of images in various media. It is in this sense that one refers to the "language of the arts." Thus the skills of artistic impression may be compared to the skills of reading, and the skills of artistic expression presumably correspond to the skills of writing.

Aesthetic experience is basic because it is a primary form of experience on which all cognition, judgment, and action depend. It is the fundamental and distinctive power of image-making by the imagination. It furnishes the raw material for concepts and the ideals for creating a world of possibility.

Facets of Aesthetic Experience

Aesthetic experience is a phenomenon that has enjoyed intense consideration by aestheticians, philosophers, educators, and psychologists. Elaborate systems of description have emerged that tend to obscure the simple fact that the aesthetic experience is the result of a natural process. There are five essential characteristics of the aesthetic experience:

1. *The aesthetic experience involves focus.* An aesthetic encounter is highly directional; it involves an energy flow from the respondent to the work of art. As a result of this quality of involvement, the respondent appears to receive stimulation from the work of art. This requires structured activities in aesthetics education.

2. *The aesthetic experience involves perception.* Perception may be viewed as the process through which data from the senses are used. A percept is that which is known of an object, a quality, or a relationship as a result of sensory experience. It is a state of awareness, rather than an image or a memory.

3. *The aesthetic experience involves affect.* Two basic types of affective response occur during the aesthetic experience: physiological change, such as changes in blood pressure and respiration as a response to music, and reaction of feelings, varying from simple feeling to the most complex emotional sets.

4. *The aesthetic experience involves cognition.* This intellectual awareness is usually manifested in one or more of the typical cognitive processes: analysis, synthesis, abstraction, generalization, evaluation. It is important for educators to note the significance of the intellectual component of the aesthetic experience because it provides structural linkage with the formal instructional program.

5. *The aesthetic experience involves the cultural matrix.* For example, music does not exist in a cultural vacuum; it has evolved out of a particular history and geography featuring discrete aesthetic value systems. The process by which we acquire our aesthetic values (acculturation) is the same process through which we acquire our social values (Knieter 1971).

These five characteristics of the aesthetic experience occur simultaneously. During the aesthetic experience the respondent feels, thinks, and concentrates. An evaluation is made in light of past experience that is culturally oriented. Perceptual acuity is based on formal and informal learning. Affective responsiveness may range from relative indifference to intense anger or rapture. Although the aesthetic experience is a complicated psychological process, it is a natural function of human behavior at every stage of life.

Educating for Aesthetic Experience

Green (1971) emphasizes that teaching for aesthetic experience frees students to change their lives and is a reason for engaging them with the arts. The student is a potential listener, reader, or beholder — an existing person caught up in his or her own life history, pursuing forms and meanings in the world. An aesthetic experience can occur only when a work of art is re-enacted or reperformed by the individual who listens, reads, or beholds. An object of aesthetic experience is one that is lived, presented to consciousness or to inner time. What seems important is the underlying agreement that the Beethoven quartet, the Auden poem, the Monet painting do not give rise to aesthetic experience unless the listener, reader, or beholder becomes active and participates in some distinct way. An aesthetic object depends on a living subject for its coming into being; each work of art, in order to become an aesthetic object, must be transmuted by a person into a life event.

Engaging in aesthetic inquiry intensifies self-consciousness with regard to experiences with music, literature, and the visual arts. It clarifies the concepts used in thinking and talking about the art forms with which we are particularly concerned and helps us make more meaningful interpretations of aesthetic facts. The special sensitivities that develop when we permit ourselves to become aware of the mystery in art actually serve to heighten our aesthetic fulfillment.

In relating aesthetics and the experience of art, Glass

(1997) describes "learning to see" as critical. Learning to see is a two-fold task requiring the removal of old habits and the learning of new ones. Seeing as the artist sees involves developing similar ways of perceiving the world. The ability to see is developed by the concept of aesthetic experience. Experience is not passive but involves an interaction between the artist and his or her environment. Seeing or hearing is an active process, not a mere registration of impression. A second concept to aid in learning to see is that of unity and variety. These must work together if an aesthetic whole is to be produced. Another aesthetic concept to aid in learning to see is expression. An expressive act is one that pursues equilibrium or a satisfied adjustment to our circumstances. Expression is an intelligent, selective process that draws from both the participant and the environment. True expression thus requires both experience and intelligent selection.

In keeping with the idea of active experiences and expression, an important part of broadening the significance of the arts in education is tied to their communicative potential. It is their capacity to communicate a particular point of view, a set of values, or a perspective that enhances, modifies, or transforms the way we see and understand ourselves and others. Paying attention to the communicative nature of aesthetic forms means understanding how they make a statement about some aspect of our own and others' experiences.

Lowenfeld and Brittain (1982) state that one of the basic abilities that should be encouraged in our schools is the ability to discover and search for answers, instead

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of passively waiting for answers and directions from the teacher. The experiences central to an art activity require self-direction.

We learn through our senses. The ability to see, feel, hear, smell, and taste provides that contact between us and our environment. Sometimes the process of educating children can be confused with teaching certain limited, predetermined responses; and the curriculum in schools tends to be little concerned with the simple fact that adults and children learn through the five senses. The development of perceptual sensitivity, then, should become a most important part of the educative process. Yet in most areas other than the arts, the senses are apt to be ignored. The greater the opportunity to develop an increased sensitivity and the greater the awareness of all the senses, the greater will be the opportunity for learning.

Art is an important way for children to express themselves as individuals. When children can draw on senses and see, hear, touch, smell, taste, and manipulate as part of their learning, the art process has meaning. It seems that art has the ability to synthesize reason and information with emotions and intuition. Art enriches the individual with a unique vitality that is different from ordinary existence.

Art has a two-fold nature, according to VanBuren (1986). First, it is an external realization of an experience that someone has created. Second, art is an internal quality that resides in some degree within all individuals.

As an educational strategy, art experiences provide a means of expression that other areas cannot easily sup-

ply. Experience is more likely to communicate emotionally as it is transformed into an artistic expression. A sculpture depicting strong feelings will communicate more feeling than a paragraph of words. Art brings together the emotions and the intellect, intuition, and logic, thus creating opportunities for a fuller logic and for a fuller quality of living.

John Dewey states that the expressive impulse of children, the art instinct, grows out of the communicating and constructive instincts (cited in Dworkin 1959, p. 70). He sees these as the natural resources, the uninvested capital, on the exercise of which depends the active growth of the child. Make the expression adequate; make it full, free, and flexible; give it a social motive, something to tell, and one has a work of art.

Art education leads to heightened consciousness and creative sensibilities and thus to more significant social action on the part of students in the curriculum and in their lives. Engagement of students is enhanced in an environment where there is artistic expression. The arts contribute to creative development and aesthetic responsiveness. Harold Rugg (1952) notes that the highest order for appreciation can be built only through participation, only through the expressive or creative act. Involvement in education through participation in the arts contributes to aesthetic experience and involves students in aesthetic awareness.

Creating Aesthetic Climate

Climate is defined as the prevailing attitudes, standards, or environmental conditions of a group or class. A climate for aesthetics must be one designed to facilitate the creation of learners who appreciate beauty. A climate that reflects the creativity of the participants, attitudes of joy and passion in learning, and standards of quality in a stimulating environment is essential. But it is not enough for students to be in a stimulating environment; they must help to create it and directly interact with it. They have to have many opportunities to tell their stories, not just to listen to the teacher's stories.

The aesthetic environment includes components that call forth responses from the students. The climate makes possible moments of vision when the student projects his potential in the present, tying together the future and past into the present, reorganizing his active role in learning. A classroom climate should promote peer acceptance and instructor acceptance, comfort and order, and involve tasks of ability, value, and quality.

It is the teacher's responsibility to establish the proper atmosphere in the classroom. Teacher attitudes help

establish positive goals concerning teacher-student relationships, student-student relationships, learning purposes of the classroom, and a supportive emotional climate. The classroom environment needs to be supportive of all persons, so that students will learn to respect individuals and ideas.

According to Herrmann (1989), one of the major keys to creative participation in a climate for learning is passion. A highly compelling, energetic attention to something is the passion teachers should seek to evoke as they create an aesthetic climate. Young children are passionate about almost everything they see. In fact, they are passionate about seeing itself, and feeling, and smelling, and hearing, and tasting, too. Their passion embraces life with all of its experiences. Even timid children, once they have been reassured, have enormous enthusiasm. They reach out for everything they can — spiders, flowers, butterflies, blocks, hands, eyes, cats, food, wind, water, worms, music — everything. They are natural experimenters, dedicated explorers, and examiners. As time goes on, they begin to make connections between things: One child, seeing oil in a puddle of water, exclaims, "Oh look! A dead rainbow!" Children's perceptions are extraordinary and novel when the wonder of the world is available in a rich learning climate.

How Teachers Create Aesthetic Climate

What role should teachers play in creating a classroom climate that purports to stimulate? The teacher

must be the catalyst for the mystery and magic in a learning environment. Students will be most creative and productive and joyful when they are doing something in which they are really interested.

The entire classroom can contribute to the student's educational experience. In creating a climate for aesthetics, the classroom becomes a sensory feast. Classes have exciting bulletin boards with interesting borders and, in the foreground, vivid instructional aids and artistically developed or presented student work. Walls are painted and fine art is displayed. Classroom design includes desk orientation and seating organization that facilitate a cooperative environment. Floors are stenciled and bright; there are colorful rugs.

Cultural events are posted. Musical concerts, regional theater events, and local museum attractions are announced; arts in the community are brought into the classroom. Framed artwork is on the wall. Music is playing. Painted Styrofoam seagulls and clouds, a net with seashells, a kite, and an inflated killer whale are suspended from the ceiling; large baskets of artificial flowers and a wicker chair adorn one aesthetic classroom.

In schools where aesthetics abound, the overall look of the school is pleasing. Bright colors and student artwork greet the community of learners who walk through the door. Teachers are enthusiastic participants in the aesthetic climate by sharing and exhibiting their visual arts, crafts, song, and dance. Students and teachers participate and learn in an aesthetic environment.

One Example of an Aesthetic Climate

The Reggio Emilia system of education is a collection of schools in Italy for young children where the principal educational vehicle involves youngsters in long-term, engrossing projects that are carried out in a beautiful, healthy, love-filled setting. One of the features of the Reggio Emilia approach to educating children is the organizational and structural characteristics of the classroom environment and the aesthetic climate of educational and caring spaces. American visitors to Reggio Emilia classrooms in Northern Italy are spellbound by the remarkable appeal of the physical surroundings (New 1994). The sense of aesthetic appreciation, attention to details, and display of children's work exemplify an aesthetic climate. There is a concerted effort to respond to aspects of the environment that give children aesthetic pleasure. Children are drawn to closer inspection and appreciation of their physical world, and the environment supports their efforts and interests. Children's works (drawings, verbal transcripts, symbol making) are presented in the classroom and hallways in large and dramatic displays and reflect the serious attention adults pay to children's ideas and activities.

The Reggio Emilia system celebrates children's expression and fashions an environment that supports and inspires artistic works. The physical plant includes an atelier, a workshop or studio, with resource materials used by children and adults in the school. It provides a place for children to master all kinds of aesthetic techniques, such as painting, drawing, and sculpting —

symbolic languages. It assists adults in understanding the processes by which children learn and helps teachers understand how children invent autonomous vehicles of expressive freedom, cognitive freedom, symbolic freedom, and paths to communication (Filippini 1994).

Teaching Content Through the Arts

A knowledge area has two sides: one is the public side — knowledge as an institution, textbook content, the inherited world of concepts, disciplines. The second is a private side — knowledge in the making, its speculative and creative aesthetic experience (Flannery 1992). The private side involves intuition, guesses, daydreams, and creativity.

Content area work can be made an aesthetic experience. The aesthetic experience involved in creating works of art is in no way different from the aesthetic experience involved in the discovery of knowledge. Teachers must bring out the aesthetic experiences of their content areas, developing a passion for the art of discovery. The emotional experiences of an artist creating and the scientist, mathematician, historian, or linguist discovering are very similar. Intellectual beauty is pervasive in knowledge. It is amazing how many of the central concepts in these disciplines — order, symmetry, unity — are also important aesthetic qualities.

True educators feel the aesthetic experience: pleasure, joy, and elation. Teachers must allow the learners also

to experience the pleasure, joy, and elation of the aesthetic experience. Students must be able to live the aesthetic experience as it pertains to various disciplines, be allowed to solve their own problems, and feel in control of the process, making it a positive, successful experience and nurturing a love for content that will kindle a lifelong learning experience. Including the aesthetic dimension in teaching and learning is demonstrated in the following ideas for teaching content through the arts.

Science

A science teacher in a lesson about molecules and their relationship to solids, liquids, and gases tells the students to pretend that their hands are dancing molecules. She moves her hands around very fast and tells the students that this is similar to the movement of molecules when heated and becoming a gas. Then she puts her hands together side by side and moves them slowly to resemble the flow of a liquid. Next she puts her hands together like a fist to demonstrate the lack of molecular movement in a solid. The students practice the dance of molecules for the different states of H_2O. Then the teacher reads the children a story about H_2O. Whenever the story describes H_2O as ice, the children make a fist. Whenever the children hear H_2O described as a liquid or a gas, they move their hands according to the correct molecular dance.

After the story, the teacher shows the class a six-foot thermometer that she made from a long tube with red

cloth wrapped loosely around it so that she can slide the cloth up and down. The red cloth represents mercury. The teacher explains to the class that when the molecules dance fast, the temperature increases and the mercury rises. She moves the mercury on the thermometer as she tells a story about the three states of H_2O. The students are then given a chance to tell the teacher which way to make the mercury go as they discuss solids, liquids, and gases.

The children return to their seats, and the teacher hands each student a paper book with blank pages. She asks them to create their own stories, titled "H_2O to the Rescue." The students draw a picture on each page of their book. The teacher walks around the room to see how each student is doing. She offers kind words of encouragement to everyone.

In the seventh-grade life science class, students research an animal of their choice. They act out the animal, describing its habitat and feeding habits and identifying the animal's predators. Then the students write their predictions for the world and, specifically, for that animal's ecosystem projected a hundred years into the future. The students then draw and sculpt their animal, as if it has adapted to future time. Salt dough is used; the teacher bakes it, and the students paint the sculptures. They create backdrops of the future habitat of the animal. Crawling, swimming, and flying animals adorn the classroom; all types of ecosystems are represented.

In an environmental science class in a secondary unit about alternative energy sources, students construct solar collectors by graphing parabolas of different focal

lengths. The class then builds them from manila folders and aluminum foil. The teacher and students have a picnic and roast marshmallows and hot dogs on their solar creations.

Other ideas for teaching science as art include:

- Make leaf and tree bark rubbings.
- Observe and draw the beauty of nature (flowers, grass, trees, insects, etc.).
- Observe chemical reactions.
- Draw or create reproductions of habitats.
- Examine light refraction and reflection.
- Create a dance showing movement of planets, the circulatory system, or cell diffusion.

Social Studies

Teachers of children of all ages have thought of creative ways to incorporate aesthetic concepts into their social studies curriculum. For example, middle school students studying ancient Rome and its contribution to architecture discover the influence Roman civilization played in the development of bathing and bathrooms by constructing a replica of a mosaic floor. The students use colored construction paper squares to fill in a simple design in the manner of an ancient decorative surface found in a Roman bathhouse.

Teachers use aesthetics very effectively in secondary social studies classes. Students are divided into groups that represent people who were involved in the westward migration of the 1800s in the United States (miners, cowboys, farmers). The students are then told to

develop skits that will show the rest of the class a typical day in the lives of the people they are assigned to represent.

Students are enthusiastic about watching films and movies. The teacher makes use of their desire by showing them movies produced several decades ago and movies produced recently. He asks students to compare the technological innovations displayed in each. Each week students are shown old and new films and asked to compare them not only in terms of content, but also with regard to the advance of technology. Then students must design and craft a movie documentary of an issue or event they are studying. They work in groups to write the script and act out the parts, and they are evaluated on the aesthetic process.

Another teacher asks students to watch a television broadcast of a political debate. She asks divergent questions concerning the broadcast. Students are asked to define the environment of the debate and to interpret the attitudes and body language of the debaters when certain questions were asked. They then engage in the drama of a debate themselves.

In another instance, a teacher is covering the *Shepherd* v. *Maxwell* U.S. Supreme Court case. After covering the case from textbooks, she plays part of the movie, *The Fugitive*, which was based on that case. She allows students to choose and act out parts of the players in this search for justice. Students present their own drama and tape each other's play.

A history and geography lesson on the culture of Provence in France focuses on "santons," or little saints.

After learning basic facts, students select a character and an animal to create out of clay and make their own santons.

Students are studying world geography during the fall semester. The students bring in pumpkins, and the teacher provides paint and a globe stencil for each student. They trace the globe on the pumpkins and paint them. Instead of a jack-o'-lanterns, the students have globe-o'-lanterns.

Other aesthetic activities for teaching social studies through the arts include:

- Role play historic events.
- Create mobiles of symbols of Eastern religions.
- Make mask constructions of pre-Columbian cultures.
- Create ceramic pots in the style of Native American art.
- Duplicate the Great Pyramid in Giza.
- Draw prehistoric cave art.
- Make dioramas of famous historical scenes.

Language Arts

The use of aesthetics to teach language arts is critical in a society where communication is dynamic. A teacher has the students in a class draw pictures, write stories about the pictures, and present them to the class, who evaluates the stories.

Another teacher first reads a story about fireflies, in turn letting the students read alternating pages. She picks the firefly subject because they have been study-

ing insects all week. Second, she has the children write the names of insects, such as *butterfly, ant, moth,* in alphabetical order. Next, she hands out a sheet of paper with an outline of a jar on it. The sheet is labeled, "You won't believe what's in my jar." The students then finish the story. Finally, she lets them all dip their thumbs in yellow paint and make firefly pictures on blue construction paper.

One teacher has eight students doing country dancing that she taught them, accompanied by taped music that she had brought to class. The songs she plays are the ones mentioned in the book students are reading, *Little House in the Big Woods*, by Laura Ingalls Wilder. Students watch the dancers; they can feel the excitement felt by people in the 1800s attending a dance as a break from the labor-intensive life they led. No TVs, radios, movies, or other electronic-based entertainment existed in the woods of Minnesota, so a country dance must have been as exciting to the pioneers as a dance is to high-schoolers today. Students express a connection to the long ago dancers, wondering if their own ancestors participated in such events and feeling sure that they did. The dancing brings the book to life.

In a unit on *The Elves and the Shoemaker*, students discuss the materials from which shoes are made. The teacher has scraps of different materials available to pass around and feel. The children then write thank-you cards to either the elves or the shoemaker (depending on which group they are in), and illustrate them. In a unit on *Rumpelstiltskin*, students spend two days focusing on the artist and his illustrations of the story.

Other ideas for creating beauty for the learner in language arts include:

- Draw scenes from stories and novels.
- Dress up as characters in stories and act out scenes.
- Illustrate stories.
- Design a museum for a heroic character or a biographical subject.
- Create dioramas of short story or novel settings.
- Design scrapbooks or yearbooks for characters in a story or novel.

Mathematics

Fostering imagination and creative reasoning provides a positive disposition toward mathematics. The recognition of dynamic beauty in math gives students greater ability to formulate and investigate problem solving.

A teacher describes the importance of physically implementing decision making and planning to help students apply geometric lessons. Student teams are directed to a creek behind their school. Their task is to measure the creek's width without using a direct measurement. Not only do the students create and develop strategies, they discover abstract and tangible limitations. The students draw pictorial representations of the creek.

In teaching students to calculate volume and surface area of rectangular and triangular prisms, the instructor has each class member create a house using rectangular and triangular prisms and calculate the surface

areas and volume of the creation. The students are given construction paper, scissors, and tape to create their houses.

For a middle school class learning prime factorization of numbers, students do an artistic rendering of the factor tree in any way they choose. The students cut out and hang the art as mobiles in the classroom. Examples are a cloud, a storm scene, and a sailboat. The artistic design is sketched on poster board with pencil and then numbers and factors are written along with the multiplication signs.

Other ideas for aesthetic activities in math include:

- Design and color graphs.
- Make quilts or mosaics out of geometric shapes; use fraction concepts or area/perimeter calculations.
- Make mobiles from shapes.
- Act out simple equations.
- Create songs to explain mathematical principles.
- Make curves from straight lines and color them.

Technology

Technology can be integrated in teaching all curriculum content through art (Hackney 1995). Education and the arts are complementary partners for a new era of learning. Challenges include ensuring a place for arts on the information superhighway, fostering collaborative relationships with cultural institutions and groups, providing training, and placing equipment in the hands of teachers and learners.

Once these challenges are met, one can only imagine the possibilities for education. Access a virtual tour of a Mayan ruin, a live demonstration of a modern ballet, or a rare recording of an Aboriginal ritual chant. Or engage in an online dialogue with a well-known playwright. Our classrooms of the 21st century can come alive with arts and cultural resources made present through technology.

Netscape offers access to the World Wide Web. HyperStudio enables students and teachers to create their own interactive microworlds. Desktop publishing software, such as Claris Works and Microsoft Word, allows students to prepare everything from class papers to flyers and booklets. Graphics software provides students and teachers with the ability to generate and input graphics into documents. Power Point enables users to prepare dynamic presentations, while the Apple videoplayer allows students and teachers to capture real images onscreen.

Introducing Prospective Teachers to Aesthetics

Bryan and Sprague (1998) describe a course at Christopher Newport University in which students are growing in creative consciousness as they gain sensibility toward aesthetic expression. The students are participating in aesthetic expression by connecting the arts to content in philosophy, sociology, and history of education as a reflection of their understanding of the teaching and learning process. The students create pottery; write original music; design dance performances; write plays, short stories, and poems; make photographs and display them; and create crafts to teach this content. They describe through the arts a reflection of their understanding of the teaching and learning process, which proves to be an educational benefit to them as teachers (a means of accomplishing teaching objectives) and a technique for involving students in learning. Expression through the arts also acts as a means of helping students in reflecting on responsible social action in teaching.

As part of the aesthetic strand, these students also are directed to look for aesthetic examples in their class-

room observations. Then they are led to reflect on the value of aesthetics for students and for the teachers. Following are three journal entries about aesthetics made by observing students:

> *Secondary social studies class:* Mr. L. started off each day with newspaper and magazine articles. A favorite type of article for Mr. L. to bring to class was cartoon excerpts from national newspapers. Students examined and explained their interpretation of the drawings. This generated much discussion because few students had the same interpretation of each cartoon.
>
> ***
>
> *Middle school math class:* Mrs. W. always presented the class with something that served to hold their attention. For example, when introducing the concept of geometric shapes to her classes, she began by reading them a love story. It was a love story about a dot and a line, who formed different geometric shapes to win the love of the dot. The students were extremely interested in this story and remained involved in the subject matter throughout the class time.
>
> ***
>
> *First-grade language arts class:* For handwriting, Ms. H. did not just have students copy "a." The lesson involved copying a poem about autumn. The students had finger-painted fall trees and leaves. After copying the poem, they put the tree and the poem together on a big piece of construction paper. All of the students in Ms. H.'s class were active and involved in the learning process.

To support the idea of the education students' own aesthetic experiences, the students are required to produce an aesthetic project that is tied to the content they will teach. Students are encouraged to find a vehicle that allows them to express themselves but also one that teaches content. Different methods suggested are: drawings, paintings, sculptures, crafts, music, dance, rhythms, poetry, and drama. Students respond enthusiastically to the challenge. A student who was studying to be a Spanish teacher created a mask made entirely of seeds and beans, representing the staple crops of many Latin American countries. The mask was designed to illustrate actual masks used in pre-Colombian times. Another student created a song that taught prepositions. She invented the lyrics to be sung to the tune of "Old MacDonald Had a Farm." After she taught the lyrics, she played the flute while the class sang along. A prospective middle school social studies teacher had students study primitive man and create cave art. An aspiring math teacher created a model for a factor tree made into a mobile and had students create their own. He used the tree to teach prime factorization.

To measure the effect of this course on students' attitudes and beliefs about aesthetics in education, an anonymous pre- and post-course survey was administered to the 41 students enrolled in Perspectives in Education. Various prompts were presented to students, such as:

- Aesthetic education has a place in my discipline.
- I can easily incorporate aesthetics into lessons that I plan.
- I am committed to aesthetic education.

Students responded with 1) strongly agree, 2) somewhat agree, 3) neutral, 4) somewhat disagree, or 5) strongly disagree. The students clearly had been influenced by the course. For example, on the three prompts above, the pre- and post-course scores were as follows:

Aesthetic education has a place. . . pre = 1.76;
post = 1.29
I can easily incorporate aesthetics. . . pre = 2;
post = 1.49
I am committed to aesthetic education. . . pre = 2;
post = 1.51

A few of the students' comments also are indicative:

> I've learned more about aesthetic education in this class than I ever knew before. I feel that the projects presented in this class would be great tools to help students learn. In my observations I see how successful teachers use aesthetics in their classroom, from projects like ours to just the decor of the room. Often the use of aesthetics gets the mood of the teacher into the class and there are obvious changes in the students (often for the better). The students seem to get more involved and interested with aesthetic projects. I feel that my project is a great tool for social studies and I could easily incorporate it into lesson plans.

Another student noted:

> The lack of aesthetics in the schools that I have observed is, I think, part of what contributes to the flatness and boredom experienced by students. I plan to light up their lives a lot!

A prospective chemistry teacher commented:

> I believe that an effective teacher should include aesthetics in her teaching method because aesthetics and science (in my case) are inseparable.

A future math teacher explained:

> I feel aesthetic education is very important in all disciplines and at all age levels. It provokes critical thinking and a better understanding of the subject matter. Aesthetic education also maintains the teacher's enthusiasm, a requirement to keep students' interest.

Students can be influenced in their attitudes toward aesthetics in the classroom, especially early in their preservice training. A combination of reading, thinking, and discussion provokes students' interest in the subject. Observing the effect of aesthetics on students in schools dramatically illustrates the power of aesthetics in enhancing student learning. And finally, requiring future teachers to present an individual aesthetic project forces them to sharpen their sensitivities to the teaching and learning process. Through aesthetics, students become aware of their own powers of self-expression and experience the joy of creation. As the future teachers realized, this energizes commitment to and enthusiasm for the act of teaching.

Evaluating the Aesthetic Dimension

Evaluation, broadly construed, involves making judgments about the merit of an object or event. Evaluation is not something that happens at the end of developmental procedures; rather, it occurs continuously and at all levels. Assessment in the arts poses many problems because of the special nature of cognition related to or involving the arts, the complexities that arrive from the tradition of expressiveness in the arts, the range of valid and valued responses, and the lack of absolute criteria — to mention only a few.

Two types of education outcomes are usually targeted: immediately observable overt behaviors, such as acquisition of skills, and long-range observable overt behaviors, such as continuing skill improvement. The primary focus of an aesthetic education program is on the former — immediate observable overt behavior. The evaluation problem therefore becomes one of establishing meaningful criteria and developing useful rubrics for any aesthetic project or process.

The assessment devices developed are unrestricted in the sense that the tasks to be performed are not necessarily objective. They may be oral in question or in response. Still, they must target the appreciation or production of craft, music, dance, poetry, design, or drama that is pleasing or satisfying.

We can demystify aesthetic evaluation without destroying the mystique of art if we concentrate on the skills of aesthetic perception, namely, the skills of aesthetic expression and impression. We can improve the sensitivity of the learner (any educated learner) to the aesthetic properties of objects. In the earlier grades, this can be done in connection with manipulation of materials in the various media; later, more demonstrations and analyses can be used. The important point is that assessment can be done systematically with students who are not endowed with unusual artistic talent. These skills will not turn the student into an artist or an enlightened critic, but they will give the student confidence that he or she is seeing, hearing, and imagining somewhat as the artist does.

Examples of Authentic Assessment

Reform efforts in education are turning teachers away from using numerical scores and averages as indicators of success and toward a focus on each student's competency in skills that will be most useful in life — being a critical thinker, knowing how to analyze and solve problems, working productively in groups, monitoring one's own learning, evaluating one's own efforts, and growing in aesthetic experience and expression.

This shift in focus is seen in the idea of alternative, or authentic, assessment. In essence, authentic assessment seeks to determine not only what students know but also what they can do. "Authentic" means of assessment typically compare a student's efforts with an appropriate model of excellence. Rubrics are created that illustrate superior, average, and unacceptable models of performance. The student examines these models and then monitors and evaluates both his or her own work and that of classmates.

An example may be useful. Following is a description of a project combining aesthetics and genetics. The figure illustrates a rubric for this project.

In a genetics class, students are asked to produce tangible, three-dimensional models of offspring to demonstrate incomplete and complete dominance and recessiveness and to predict the genome of possible offspring. They also are asked to show the results of several other processes: meiosis, fertilization, cell division, and population diversity.

In this project each creature has seven pairs of chromosomes representing separate traits: eyes, antennae, legs, tail, body segments, nose, and humps. Students construct one creature after selecting chromosomes from the male and female gene pool. Then using a decoder key, students create their creatures with the corresponding traits. At the end of this process the students and their teacher examine the created population. Students give oral presentations about the genetic makeup of their own creature (whether recessiveness, incomplete dominance, or complete dominance has occurred).

Rubric for Aesthetics and Genetics

Criterion	Quality	Lack of Quality
Visual (Design)	Exhibits a unique creature that is visually pleasing or interesting.	Not unique, no expression of celebration of project.
Constructive (Craft)	Explains process of creation. Exhibits focus, perception, affect, and cognition.	Does not explain thought processes for creation. No focus, perception. Lacks affect and cognition.

Other evaluation tools basic to performance and product assessment include rating scales, checklists, anecdotal records, and portfolios. Rating scales provide a list of characteristics to be observed and a scale showing the degree to which they are present. Checklists, or yes-no rating scales, are useful when a process can be divided into steps and each one checked for its presence.

Anecdotal records are recorded observations of student behaviors made during classwork. Such records can be used to assess the performance of students selecting portraits of painters in an art history unit, for example. They might trace the pattern of shapes represented in the photos and then go on a treasure hunt through books to identify the artist and write something of the life and work of their artist for a presentation.

Portfolios are collections of student work that demonstrate a student's progress toward achieving learning objectives. In social studies and history — whether in third grade or high school — maps and charts created by students to show understanding provide a practical record of student progress in the content area and in design. Any student composition in music, visual art, dra-

ma, poetry, or craft produced to accomplish learning goals is a significant contribution to the portfolio.

Examples of Assessment for Aesthetic Goals

National standards and some of the various state standards in art and aesthetics describe processes for evaluation. Examples from Virginia's *Standards of Learning in Art Goals* (1989) include:

> *Goal:* The student will recognize and identify technological developments in visual art.
>
> *Evaluative Statement:* This is accomplished by measuring students' direct exposure to computers, through demonstration, or the practical application of computers to design problems.

> *Goal:* The student will describe and respond to famous works of art.
>
> *Evaluative Statement:* Role playing, physical movement, visual searches, listings, and game-like activities will show students development of visual perception.

> *Goal:* The student will recognize that art is a means of communicating feelings, ideas and information.
>
> *Evaluative Statement:* Participation in role playing, game-like activities and group discussions are utilized to enhance understanding and for evaluative measure.

> *Goal:* The student will identify the contribution of artists to society.

Evaluative Statement: This involves knowing about such artists as art educators, architects, commercial artists, graphic artists, industrial designers, communication media (film and video) artists as well as fine artists and craftsmen. The emphasis is on how the products of these artists affect one's daily life and measured by students' descriptions.

Goal: The student will apply appreciation skills to the critiquing of the individual's own work and the work of others.

Evaluative Statement: This requires that the student make choices, form judgments, and express preferences based on personal and art criticism criteria.

Goal: The student will express and interpret feelings and experiences in artwork that makes a personal statement.

Evaluative Statement: Thoughts, feelings, and experiences can be communicated to others through art and these should be an original reflection of the person creating the work.

Goal: The student will make aesthetic judgments about visual works of art.

Evaluative Statement: Emotional response and rational evaluation are both involved in making a value judgment, but the focus is on the student using an aesthetic criticism method and delaying personal opinion until the process is complete. This involves a synthesis of description, analysis, and interpretation before making an evaluation.

Conclusion

Aesthetic value enhances our personal and professional lives and contributes to our environment. If one defines the aesthetic sense as the faculty that enables one to modify the quality of his or her environment, then it follows that aesthetic education should be a means to achieve this end. In order for that to happen, there must be changes both in the schools and in the wider community to allow youngsters the fullest opportunity to develop and use this aesthetic sense and to act on their environment as they learn — to be engaged with that environment rather than merely passively responding to it.

Students need an education of the senses so that they will be consciously and continuously helped to grow into a fuller use of the senses. Furthermore, as they learn, they must have many opportunities to apply their growing knowledge — to judge, to compare, and to value the reports their senses give them. Children must be able to construct things that elicit these sensuous responses and that express their growing awareness of the world and its wonders.

When the purpose of aesthetic education is accomplished, beauty is created for the learner. There is joy in learning that incorporates the aesthetic experience: focus, perception, affect and cognition, and the cultural matrix. Design, music, dance, poetry, drama, and craft permeate the physical, emotional, and learning environment. Aesthetics is incorporated into curriculum content and evaluation.

Implications for professional action for aesthetic education include: 1) a major rethinking of our teacher preparation programs, 2) a major rethinking of the ways we organize and use teachers and artists in our schools, and 3) a thoroughgoing reevaluation of the ways we use the resources of the wider community. These necessities clearly imply continuing professional action — both personal action on the part of each of us and action on the part of our professional organizations. Recent coordinated activities between the U.S. Department of Education and the National Endowment for the Arts emerged as a result of DOE's recognition that the arts cultivate the whole child, gradually building many kinds of literacy while developing intuition, reasoning, imagination, and dexterity into unique forms of expression and communication.

Everyone has seen the life of at least one child changed by the courage and vitality of the theater, the power of a brush stroke, the discipline of a dance step, or the expressive opportunities of music. Today's biology research suggests that it is the arts that lay the foundation for later academic and career success. A strong art foundation builds creativity, concentration, prob-

lem-solving skills, self-efficacy, coordination, and values attention and self-discipline (Jensen 1998). We know that to live full lives, all children — indeed all people — need opportunities to experience, appreciate, create, and reflect on art.

Teachers of students of all ages need to think of creative ways to incorporate aesthetic concepts into the curriculum. What teachers do in classes must be relevant to the lives of the students as they interpret and create their world. But there also are other reasons for the arts to be regarded as necessary. They touch on the role of art and the artist in society. One of these is the role of art as a value marker. Whatever a society regards as of major importance it underscores by using art. Crucial episodes in history, critical events (birth, marriage, war, death) are stylized by ritual and ceremony so that all members of the community perceive their import through an aesthetic image. Rituals create powerful community attitudes.

Furthermore, society relies on the images of art to define the social roles of the family, government, and religion and the status of the individuals in these institutions. Popular arts in the mass media provide the standard images; more serious art creates more sophisticated and complex images for these roles. It is to the arts that we look for the model of our national heroes, military and moral, as in school programs of character education (Broudy 1988).

Aesthetic education can nourish the potential within every human to become a valued member of a diverse society. Educating for beauty contributes to the inter-

ests of learners for living, laughing, and working together productively and joyfully. Communities collaborating for learners and learning will offer an environment of cultural resources both in and out of school to enrich the aesthetic experience for learners.

Teachers must allow and encourage the students to express themselves creatively, naming the world as the artists of their own lives and learning. By considering the aesthetic in the presentation of knowledge, we will help the students we teach to experience the creative process and to learn, through participating in beauty and art, to be whole human beings.

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